

TABLE 41

Domestic R&D paid for by others and performed by the company, by source of funds, industry, and company size: 2019

(Millions of U.S. dollars)

Industry and company size	NAICS code	Total	Companies in the United States	Companies outside the United States		U.S. federal government agencies	U.S. state government agencies	Foreign government agencies	U.S. universities, colleges, and academic researchers	Foreign universities, colleges, and academic researchers	All other	
				Company's parent	Unaffiliated companies						In the United States	Outside the United States
All industries	21-23, 31-33, 42-81	63,989	21,461	17,563	1,991	21,941	100 - 192	123	47	3 - 16	627 - 719	32 - 44
Manufacturing industries	31-33	37,564	5,470	14,290	1,459	16,023	14 - 107	119	8	0 - 11	72 - 164	11 - 23
Food	311	243	5	234	2	*	0	0	*	0	1	0
Beverage and tobacco products	312	111	*	111	0	0	0	0	0	0	0	0
Textile, apparel, and leather products	313-16	31	6	*	5	7	0	0	*	0	12	0
Wood products	321	6	0	6	0	0	0	0	0	0	0	0
Paper	322	*	*	0	*	*	0	0	0	0	*	*
Printing and related support activities	323	0	0	0	0	0	0	0	0	0	0	0
Petroleum and coal products	324	103	0 - 21	72 - 104	0 - 9	*	0	0	0	0	0	0
Chemicals	325	9,775	1,967	6,643	816	289	1	*	6	0 - 10	45	0 - 10
Basic chemicals	3251	162	19	141	*	2	0	0	0	0	0	0
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	80	0 - 7	61 - 77	1	*	*	0	0 - 1	0	0 - 10	*
Pesticide, fertilizer, and other agricultural chemicals	3253	320 - 345	0 - 7	287 - 345	0 - 15	0 - 8	0	0	0	0	0 - 10	0 - 10
Pharmaceuticals and medicines	3254	8,966	1,938	5,906	801	269	0 - 2	*	6	0 - 9	35 - 43	0 - 9
Soap, cleaning compound, and toilet preparation	3256	164	5	158	1	*	0	0	0	0	*	*
Paint, coating, adhesive, and other chemicals	3255, 3259	56 - 84	0 - 7	14 - 72	0 - 15	11 - 20	0 - 2	0	0 - 1	0 - 10	0 - 10	0 - 10
Plastics and rubber products	326	85	75	10	*	*	0	0	0	0	0	1
Nonmetallic mineral products	327	35	2	31	*	2	0	*	*	0	*	*
Primary metals	331	16	0 - 10	0 - 10	5	2	0	*	*	0	0	0
Fabricated metal products	332	254	190	60	*	4	0	0	*	0	*	*
Machinery	333	1,254	371	632	57	193	1	*	0	0	*	*
Agricultural implement	33311	9	1	6	*	1	*	0	0	0	0	0
Semiconductor machinery	333242	604	48	497 - 557	0 - 58	*	0	0	0	0	0	*

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Engine, turbine, and power transmission equipment	3336	205	40	11	0	155	*	i	0	0	0	*	0						
Other machinery	other 333	436	282	57 - 117	0 - 58	37	1	i	*	0	0	*	i	0					
Computer and electronic products	334	11,159	1,679	3,283	321	5,802	0 - 23	36	1	0 - 2	i	14 - 37	2 - 6						
Communications equipment	3342	1,100	i	298 - 471	i	124 - 297	0 - 53	320 - 453	i	*	i	*	i	*	i				
Semiconductor and other electronic components	3344	3,208	213	2,379	142	468	*	0	1	0 - 2	i	5	0 - 2	i					
Navigational, measuring, electromedical, and control instruments	3345	6,650	997	609	128	i	4,852	0 - 22	36	*	0	6 - 28	3						
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	225	15	i	192	*	i	11	i	*	i	0	7	i	0				
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	6,262	944	332	119	i	4,813	0 - 21	33	*	0	0 - 21	3						
Other measuring and controlling device	other 3345	163	38	85	9	28	0	3	*	i	0	0	0						
Other computer and electronic products	other 334	201	0 - 170	0 - 170	0 - 53	31 - 161	*	*	i	0	0	1	0						
Electrical equipment, appliances, and components	335	377	30	i	315	2	27	1	0	1	0	*	0						
Transportation equipment	336	13,870	i	1,031	2,778	242	9,652	i	0 - 79	82	i	*	0	0 - 79	9	i			
Motor vehicles, bodies, trailers, and parts	3361-63	3,233	i	0 - 374	i	2,564	190	38 - 481	0 - 79	*	i	0	0	0 - 79	*	i			
Aerospace products and parts	3364	9,458	i	658	124 - 205	i	52	8,454	i	1	82	i	*	0	0 - 79	9	i		
Aircraft, aircraft engine, and aircraft parts	336411-13	8,550	i	646	124 - 205	i	52	7,558	i	1	82	i	*	0	0 - 79	9	i		
Guided missile, space vehicle, and related parts	336414-15, 336419	908	12	0	0	896	0	0	0	*	0	0	0	0					
Military armored vehicle, tank, and tank component	336992	10	0 - 11	0	0	0 - 11	0 - 11	0	0	0	0	0	0	0					
Other transportation	other 336	1,168	0 - 374	8 - 91	0	706 - 1,160	0	0	0	0	0	0	0	0					
Furniture and related products	337	2	0 - 2	i	0	*	i	0 - 3	i	*	i	*	i	0	0	*	i	*	i

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Miscellaneous	339	244	98 - 120	72 - 104	4 - 14	36 - 48	*	0	0	0	2	* i
Medical equipment and supplies	3391	202	99	73	5	25	*	0	0	0	* i	* i
Other miscellaneous manufacturing	3399	42	0 - 21	0 - 30	0 - 9	11 - 24	0	0	0	0	2	0
Nonmanufacturing industries	21-23, 42-81	26,425	15,991 i	3,273	532	5,918	85	5	39	4	556	21
Mining, quarrying, oil and gas extraction, and support activities	21	183	72	92	17	1	0	0	0	0	0	* i
Utilities	22	38	0	0 - 8	0	27 - 34	3	0	0	0	0	0
Wholesale trade	42	87	12 i	76 i	* i	0	0	0	0	0	0	0
Electronic shopping and electronic auctions	454111-12	43 - 61	0	35 - 61	0	0 - 8 i	0	0	0	0	0	0
Transportation and warehousing	48-49	386	384	0	0	2	0	0	0	0	0	0
Information	51	1,165	81	674	186	185	* i	* i	*	0	38	*
Publishing	511	572	4	345	131	57	* i	* i	0	0	35	* i
Newspaper, periodical, book, and directory publishers	5111	*	0	0	* i	* i	0	0	0	0	* i	0
Software publishers	5112	572	4	345	131	57	* i	* i	0	0	35	* i
Telecommunications	517	33	2 i	12 - 28	0 - 14 i	4 i	0	0	0	0	1 i	0
Data processing, hosting, and related services	518	404	66	178	43	116	*	0	*	0	0	*
Other information	other 51	155	9	122 - 138	0 - 14 i	8 i	0	0	0	0	2 i	0
Finance and insurance	52	28	28	0	0	0	0	0	0	0	0	0
Real estate and rental and leasing	53	0	0	0	0	0	0	0	0	0	0	0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	0	0	0	0	0	0	0	0	0	0	0
Other real estate and rental and leasing	other 53	0	0	0	0	0	0	0	0	0	0	0
Professional, scientific, and technical services	54	24,103	15,076 i	2,362	312	5,685	81	5	39	4	518	21
Architectural, engineering, and related services	5413	1,919	509	44	14	1,214	49	3	12	3	63	8
Computer systems design and related services	5415	2,651	489	1,491	12	454	5	* i	*	* i	201	0
Scientific research and development services	5417	18,403	13,741 i	760 i	242	3,343	24	2	25	1 i	252	13 i
Research and development in biotechnology	541711	5,374	4,851	231 i	38	108	9	1	2 i	0	129 i	6 i

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Research and development in the physical, engineering, and life sciences (except biotechnology)	541712	12,291	i	8,861	i	530	i	204		2,571	6		1		21		1	i	90	7	
Research and development in the social sciences and humanities	541720	738		30		0		0		664	9		0		2		0		33	0	
Other professional, scientific, and technical services	other 54	1,129		337		67		44		674	4		0		1		*		2	*	i
Health care services	621-23	337		331		0		4		2	0		0		0		0		*	i	0
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	34 - 58		8	i	0 - 29		12		9 - 19	1	i	*	i	0		0		*		0
All companies (number of domestic employees)	-	63,989		21,461		17,563		1,991		21,941	100 - 192		123		47		3 - 16		627 - 719	32 - 44	
Small companies																					
10-19 ^a	-	1,070		315	i	99	i	42	i	502	16		1		7		3		80	6	i
20-49	-	2,378		766		595		65	i	811	6		4		20		0 - 6		107	0 - 6	
Medium companies																					
50-99	-	2,529		796		573		211		697	10		*		7		0 - 5		232	0 - 5	
100-249	-	3,274		1,029		1,060		87		988	0 - 92		*		10		0 - 11	i	0 - 93	0 - 11	
Large companies																					
250-499	-	3,527		623		1,216		189		1,393	10		*	i	1		0		87	8	
500-999	-	2,420		566		1,439		153		248	i	7	*	i	1	i	0		6	i	1
1,000-4,999	-	11,196		1,924	i	6,993		507		1,710	28		3		*		*		31	*	i
5,000-9,999	-	6,083		3,908	i	795		346		977	0 - 56		*		2		0		0 - 56	2	
10,000-24,999	-	13,878	i	7,183	i	4,623		295	i	1,717	i	18	36		0		0		5	0	
25,000 or more	-	17,635		4,352		171		97		12,897	i	9	79	i	0		0 - 13	i	20	0 - 13	i

* = amount < \$500,000; i = > 50% of the estimate is a combination of imputation and reweighting to account for nonresponse.

NAICS = 2012 North American Industry Classification System.

^a The Business Enterprise Research and Development Survey does not include companies with fewer than 10 domestic employees.

Note(s):

Detail may not add to total because of rounding. Industry classification is based on the dominant business code for domestic R&D performance, where available. For companies that did not report business codes, the classification used for sampling was assigned. Beginning in survey year 2018, statistics are representative of companies located in the United States that performed or funded \$50,000 or more of R&D. This change has affected the comparability of these estimates with estimates published for years prior to 2018. An estimate range may be displayed in place of a single estimate to avoid disclosing operations of individual companies.

Source(s):

National Center for Science and Engineering Statistics and Census Bureau, Business Enterprise Research and Development Survey, 2019.